

ABSTRACT OF THE DISCLOSURE

An apparatus and method for current balance in a
5 multi-phase DC-to-DC converter with a converter output voltage and
a plurality of channel currents employs for each channel a
multi-input pulse width modulator or an ordinary pulse width
modulator in conjunction with a multi-input comparator to produce
a respective PWM signal to regulate the corresponding channel
current. In addition to the comparison of the converter output
10 voltage with a reference signal to produce an error signal, the
apparatus and method compares the error signal with a ramp signal
and the corresponding channel current with each of the other
channel currents with the multi-input pulse width modulator.
15 Alternatively, a ramp signal is compared by the ordinary pulse width
modulator with a signal derived from the multi-input comparator
which subtracts the corresponding channel current from each other
channel current and sums the error signal.